

Serial No.: 09/920,427

Atty. Docket: 012720-27

Claim Rejections – 35 USC § 102 anticipation by Hewitt

The Examiner rejected claims 1, 3, 4, 15, and 17 as being clearly anticipated by U.S. Patent No. 4,647,892 to Hewitt. Hewitt discloses a dual magnetic sensor utilizing a pair of separate coils to generate separate and isolated signals from a single pickup point. Claims 1, 3, and 4 are cancelled. Claims 15 and 17 remain for consideration by the Examiner.

1. Independent claim 15

Claim 15 is directed towards a sensor that measures blade characteristics through a jet engine casing. This is contrary to the teaching of Hewitt, which shows an opening in a gearcase 26 through which its housing 11 passes for measurement by its sensor. (See Hewitt Fig. 3). The Applicant's sensor is sized and shaped to result in a magnetic force with a magnitude adequate to penetrate a casing. (See, e.g., Applicant paragraphs 8, 28, 29, and 35). Hewitt discloses a sensor that has a penetration through a casing in order to function. Because Hewitt does not disclose a magnet mounted proximate to (but not through) the casing and sized so that the stationary magnetic field can be intersected by the blade, Hewitt cannot anticipate claim 15.

Applicant's sensor is also not obvious in view of Hewitt. Hewitt neither teaches nor suggests a sensor with a magnetic field that penetrates a casing. Hewitt's functional differences from Applicant's invention preclude claim 15 as being considered obvious in view of Hewitt.

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2. Dependent claim 17

As claim 17 depends from claim 15 and adds limitations thereto, it is respectfully submitted that this dependent claim is allowable for the reasons discussed above corresponding to claim 15.

Claim Rejections – 35 USC § 102 anticipation by Anderson

The Examiner rejected claims 1, 3-6, 15, and 17-19 as being clearly anticipated by U.S. Patent No. 4,256,986 to Anderson. Anderson discloses a magnetic pickup subassembly having a matrix-bonded permanent magnet sleeve around one end of an elongated cylindrical pole piece and a coil around the other end. Claims 1 and 3-6 are cancelled; claims 15 and 17-19 are addressed below.

3. Independent claim 15

Claim 15 is directed towards a sensor that measures blade characteristics through a jet engine casing. This is contrary to the teaching of Anderson, which shows a rotor 17 passing directly next to the sensor pole piece 12. (See Anderson Fig. 1; col. 3, lines 24-37). Applicant's sensor is "sized so that the stationary magnetic field penetrated through the casing and can be intercepted by the blade." (See, e.g., Applicant paragraphs 8, 28, 29, and 35). Anderson discloses a sensor that must have a penetration through a casing in order to function. Because Anderson does not disclose a magnet mounted proximate (but not through) to the casing and sized so that

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the stationary magnetic field can be intersected by the blade, Anderson cannot anticipate claim 15.

Applicant's sensor is also not obvious in view of Anderson. Anderson neither teaches nor suggests a sensor with a magnetic field that can extend through a casing. Anderson's functional differences from Applicant's invention preclude claim 15 as being considered obvious in view of Anderson.

4. Dependent claims 17-19

As claims 17-19 indirectly depend from claim 15, and respectively add limitations thereto, it is respectfully submitted that these dependent claims are allowable for the reasons discussed above corresponding to claim 15.

***Claim Rejections – 35 USC § 103 obviousness in view of
Anderson and "obvious design considerations"***

Claims 2, 7-14, 16, and 20-24 were rejected as being obvious in view of Anderson. Claim 2 is cancelled.

5. Independent claims 7, 13, 20, and 21.

5.1 Claim 7

Claim 7 is directed towards a sensor that measures characteristics of a moving conductive object through an intervening barrier of material. This is contrary to the teaching of Anderson, which shows a rotor 17 passing directly next to the sensor pole piece 12. (See Anderson Fig. 1; col. 3, lines 24-37). Anderson, therefore, discloses a

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sensor that must have a penetration through a casing in order to function. Applicant's sensor requires a geometry allowing measurement to be performed through the barrier. (See, e.g., Applicant's paragraphs 8, 28, 29, and 35). The measurement of moving conductive objects, such as turbine blades, has previously been performed through a penetration through a barrier as shown in Anderson.

Applicant's sensor is not obvious in view of Anderson, nor is measuring moving conductive objects through a barrier, without a penetration, an obvious design consideration. Anderson neither teaches nor suggests a sensor that penetrates a casing. Measurement through a barrier as in Applicant's invention is not old and well known in the art. The functionality of Anderson as combined with the "obvious design considerations," which do not suggest or teach the Applicant's invention, noted by the Examiner do not result in a case of *prima facie* obviousness.

5.2 Claim 13

Claim 13 is nonobvious for the same reasons as noted for claim 7 in paragraph 5.1 above, with the limitations applied to a jet engine casing rather than an intervening barrier.

5.3 Claim 20

Claim 20 is directed to a method of measuring characteristics of moving turbine blades through a casing using a magnet having a generally rectangular cross-section

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and other features similar to those of claim 13. For the same reasons as discussed above for claim 13 in paragraph 5.2, claim 20 is nonobvious.

5.4 Claim 21

Claim 21 is directed to a method of measuring characteristics of moving turbine blades through a casing using a generally cylindrical cross-section and other features similar to those of claim 15. For the same reasons as discussed above for claim 15 in paragraph 3 above (as well as in paragraph 1 with respect to Hewitt), claim 21 is nonobvious.

6. Dependent claims 2, 8-12, 16, 22-24

Claim 2 is cancelled. As claims 8-12, 14, 16, and 22-24 depend directly or indirectly from independent claims 7, 13, 15, and 21 respectively, and add limitations thereto, it is respectfully submitted that these dependent claims are allowable for the reasons discussed above corresponding to the respective independent claims. In addition, Applicant asserts that because claims 8, 9, 10, 12, 22, and 24 explicitly require a barrier or casing they are also nonobvious and allowable.

If the Examiner has any questions about the present Reply or anticipates finally rejecting any claim of the present application, a telephone interview is respectfully requested.

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As the rejections entered by the Examiner in the Official Action dated July 17, 2002 have been shown to be inapplicable, reconsideration and allowance of claims 7-24, and passage of these claims to issue, is hereby respectfully requested.

Respectfully submitted,

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